



OFFICIAL PUBLICATION OF THE ARIZONA SOCIETY OF ARCHITECTS,  
THE CENTRAL ARIZONA CHAPTER AND SOUTHERN ARIZONA CHAPTER  
OF THE AMERICAN INSTITUTE OF ARCHITECTS

Color As Environment

MARCH 1959 Vol. 2, No. 7

# AIA ARIZONA ARCHITECT

# Smart Modern Versatile



## New WATERLOO Airline Grilles



**FLOORS**

**SILLS**

**WALLS**

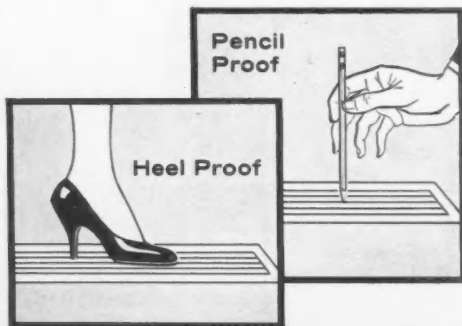
New, streamlined Waterloo Airline Grilles fit perfectly into modern architectural and engineering concepts. These extruded aluminum grilles, available up to 12 feet in length in one piece construction, are excellent for every type of floor, sill and wall application.

Designed to match a wide range of architectural finishes,

Waterloo Airline Grilles feature a unique bar-support method that makes them practically tamper-proof. Since these units are designed with  $\frac{1}{4}$ " face bars on  $\frac{1}{2}$ " centers, they are heel and pencil proof.

**Write for comprehensive Selection Guide on these new multi-purpose Waterloo Grilles.**

**WATERLOO REGISTER COMPANY, INC.**  
P.O. BOX 72, WATERLOO, IOWA



WR107

Represented  
in Arizona by

**CARNS-HOAGLUND CO.**

420 N. 15th Ave. • Phoenix, Arizona  
Air Conditioning • Heating • Ventilating







# AIA ARIZONA ARCHITECT

POST OFFICE BOX 904  
PHOENIX, ARIZONA

1423 N. Third Ave.,  
Phone Alpine 2-4318



Official Monthly Publication of the  
**ARIZONA SOCIETY OF ARCHITECTS**  
comprised of  
**CENTRAL ARIZONA CHAPTER and  
SOUTHERN ARIZONA CHAPTER of  
THE AMERICAN INSTITUTE OF ARCHITECTS**

Phil Stitt .....Managing Editor

## CHAPTER OFFICERS

### CENTRAL ARIZONA CHAPTER

A. John Brenner .....	President
97 W. Lynwood, Phoenix	
Jimmie R. Nunn .....	Vice-President
Kemper Goodwin .....	Secretary
P.O. Box 904, Phoenix	
Lester Laraway .....	Treasurer
James W. Elmore .....	Director
Martin Ray Young, Jr. ....	Director
David Sholder .....	Director

### SOUTHERN ARIZONA CHAPTER

Edward H. Nelson .....	President
P.O. Box 731, Tucson	
Gerald I. Cain .....	Vice-President
Robert J. Ambrose .....	Secretary
2447 N. Stone, Tucson	
David S. Swanson .....	Treasurer
Emerson C. Scholer .....	Director
D. Burr DuBois .....	Director
Santry Fuller .....	Director

Subscriptions: \$4 a year  
Per copy: 40 cents

March, 1959  
Volume 2, No. 7

## IN THIS ISSUE

<b>COVER</b> Design by William Goldblatt, office of William Wilde, AIA, Tucson	
<b>CHAPTER NEWS</b> New state registrants, coming events	Page 4
<b>PRESIDENT'S PAGE</b> Brenner on member activities; guest columnist David Swanson on need for state master plan	Page 7
<b>PERSPECTIVE</b> The editor sees red — and other hues.	Page 9
<b>HEAT AND INSECTS ARE AFFECTED BY COLORS</b>	Page 10
<b>THE UTILITY OF COLOR IN ARCHITECTURE</b>	Page 11
<b>COLOR SCRIPTURES FROM NATURE'S WESTERN BIBLE</b> By Dr. Harry Wood	Page 14
<b>THE CONNOTATIONS OF COLOR</b> Traditional associations	Page 17
<b>SURFACE AND INTRINSIC COLOR</b> By Gordon Heck	Page 20
<b>CONSTRUCTION BOOM FORECAST</b>	Page 22
<b>LOOKING AT THE SPECS</b> Surface preparation for paint. First of a new series on specifications	Page 23
<b>BOOKS</b> Several on color. See also page 10	Page 24

Signed articles reflect the views of the authors and do not necessarily represent the official position of the Arizona Society of Architects or the Central or Southern Arizona Chapters, AIA.

## Advertisers' Index

ARIZONA PORTLAND CEMENT CO.	14	O'MALLEY'S BUILDING MATERIALS	23
ARIZONA PUBLIC SERVICE CO.	14	PHOENIX ROOFING & SUPPLY CO.	19
ARIZONA STATE REGISTRAR OF CONTRACTORS	16	PIONEER PAINT AND VARNISH CO.	22
ARIZONA STRUCTURAL CLAY PRODUCTS ASS'N.	8	PIPE TRADES INDUSTRY PROGRAM	18
ARIZONA TESTING LABORATORIES	21	PITTSBURGH PLATE GLASS CO.	12
BOB CUSHMAN PAINTING & DECORATING, INC.	17	ROBINSON BRICK & TILE CO.	5, 6
CARNS-HOAGLAND CO.	2	ST. CHARLES KITCHENS	13
CONCRETE PRODUCTS CO.	21	PHIL STONE CO.	16
ENTZ-WHITE LUMBER & SUPPLY, INC.	10	SUPERIOR SAND AND GRAVEL	23
GLEN-MAR DOOR MANUFACTURING CO.	19	SUPERLITE	10
HASKELL-THOMAS, INC.	25	THOREN'S SHOWCASE AND FIXTURE CO.	15
INTERNATIONAL METAL PRODUCTS CO.	26	UNION GYPSUM CO.	8
NELSON-HOLLAND BUILDERS HARDWARE	21	VENT-A-HOOD OF ARIZONA	20

## CENTRAL ARIZONA CHAPTER NEWS

- The regular meeting of the chapter was held March 12th at the Hiway House with the Arizona Society of Professional Engineers. Included in the program was a talk on the subject of the smog problem, given by C. Robert Simpson, counsel for the Southern California Edison Co. Recent architectural and engineer registrants, and new corporate members of the AIA were presented their certificates during the evening. Also present as guests of the chapter were members of the State Board of Technical Registration.
- Various committee chairmen are being invited to attend the Executive Committee meetings to discuss their activities and problems with the Directors. Future activities anticipated include an accelerated membership and meeting-attendance drive, planned programs for the regular meetings and the issuance of a revised, recommended fee schedule.

— AIA —

### NEW STATE REGISTRANTS

The State Board of Technical Registration has announced that as of February 1, 1959, the following architects have been newly registered and certified in the State of Arizona:

Jose Almanza, Los Angeles; Edward Davies, Pasadena, Calif.; David Hayes, Salt Lake City; Lloyd Scholl, Indianapolis; and Duffy Stanley, El Paso, Texas.

— AIA —

### AIA FILMSTRIP NOW AVAILABLE

"Buildings for Business," AIA's new animated filmstrip, is primarily designed as a speaker's aid before mixed business audiences. Its purpose is to explain to public groups the manner in which the planning of business buildings is approached. Emphasis is placed upon the relationship of the architect and the building owner.

The film combines free-hand drawings in limited animation with approximately 30 color photographs of distinguished contemporary buildings. 13½ minutes in length, cleared and monitored for television use and designed for 16mm. sound projectors, the filmstrip may be rented or purchased from The American Institute of Architects, Library, 1735 New York Ave., N.W., Washington 6, D.C.

— AIA —

### PHOENIX HOMESHOW

The Phoenix Association of Home Builders will sponsor **Arizona Living**, a show to be held in Phoenix during National Home Week in September. B. F. Loftfield, President of the local association has announced that the show will have many new and unique features that will vividly portray to local residents and visitors alike, a most comprehensive picture of life in a modern home in the Valley of the Sun. Further details will be announced at a later date.

## SOUTHERN ARIZONA CHAPTER NEWS

- Applications for new associate memberships have been approved by the Executive Committee for Dennis Brizee and B. Gail Buckmaster.
- At its March 4 meeting the chapter was treated to a delightful and informative talk on the history of baroque architecture, given by Dr. Robert M. Quinn, Associate Professor of Art, U of A.
- Several architects have submitted drawings which will serve as the basis of a group study and constructive criticism in an effort to discover better and more economical methods of preparing drawings. The program, under the direction of the Research Committee, will include open meetings to be announced.
- The Scholarship and Awards Committee is arranging an exhibit of local architects' work to be held between May 15 and June 6. Chapter awards dinner will be June 3.
- The Chapter is issuing an invitation to the Western Mountain District, AIA, to hold its 1960 annual conference in Tucson.

— AIA —

### ARCHITECTURAL FORUM AT U. OF A.

An architectural forum, under the sponsorship of the Tucson Festival Society, will be held in the U. of A. Theater at 8:30 p.m., Monday, April 6.

Sidney Little, AIA, will moderate the affair which will consider "Tucson and its place in the new Southwest — its architectural heritage, where it stands now, and future prospects."

Keynote talk will be given by Walter Taylor, Director of Education and Research of the American Institute of Architects.

Four panel members will be Newsom Holesapple, Vice President of Tucson Realty Company; Robert Howe, a director of Southern Arizona Bank; Andrew Faure, City-County Planning Director, and Gordon Heck, Associate Professor of Architecture, U. of A.

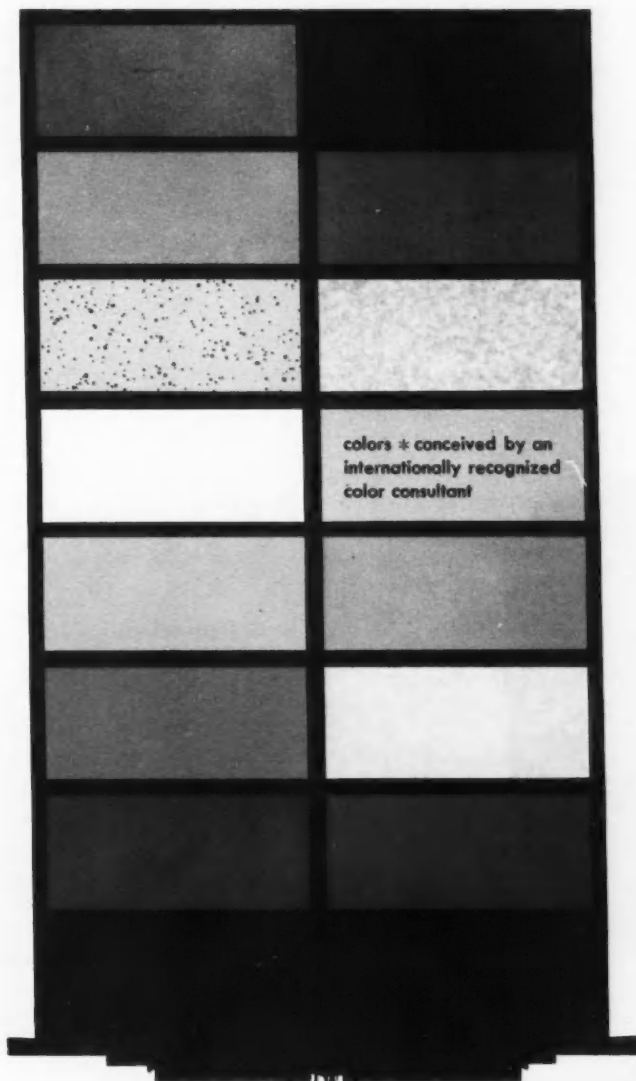
Following the panel presentation, student body and architects will participate in a general discussion. The public is invited.

On April 20-21, Raphael Soriano, of California, will serve as a visiting architectural critic, as guest of the U. of A. Student Chapter, AIA. On the 21st he will give a slide lecture, citing problems he has faced and describing how they were solved.

— AIA —

### F.H.A. POSITION OPEN

The F.H.A. has announced Appraiser, GS-9, positions open in Phoenix and Tucson offices. Salary begins at \$5985 per annum. Qualifications and examination applications may be obtained at 244 West Osborn Road, Phoenix, Arizona.



AT  
ONE  
PRICE...

\* HARMONY  
COLORS

OF STRUCTURAL  
GLAZED TILE

Now... Robco's "one-price-only" for all 15 colors of Structural Glazed Tile opens exciting new vistas for color-conscious, budget-minded architects and designers who seek greater freedom in originating new, harmonious designs and patterns in color. This color flexibility, without extra cost, combined with Robco's tighter-than-ever accuracy standards, permits a new color concept in designing display areas as well as traditional applications.

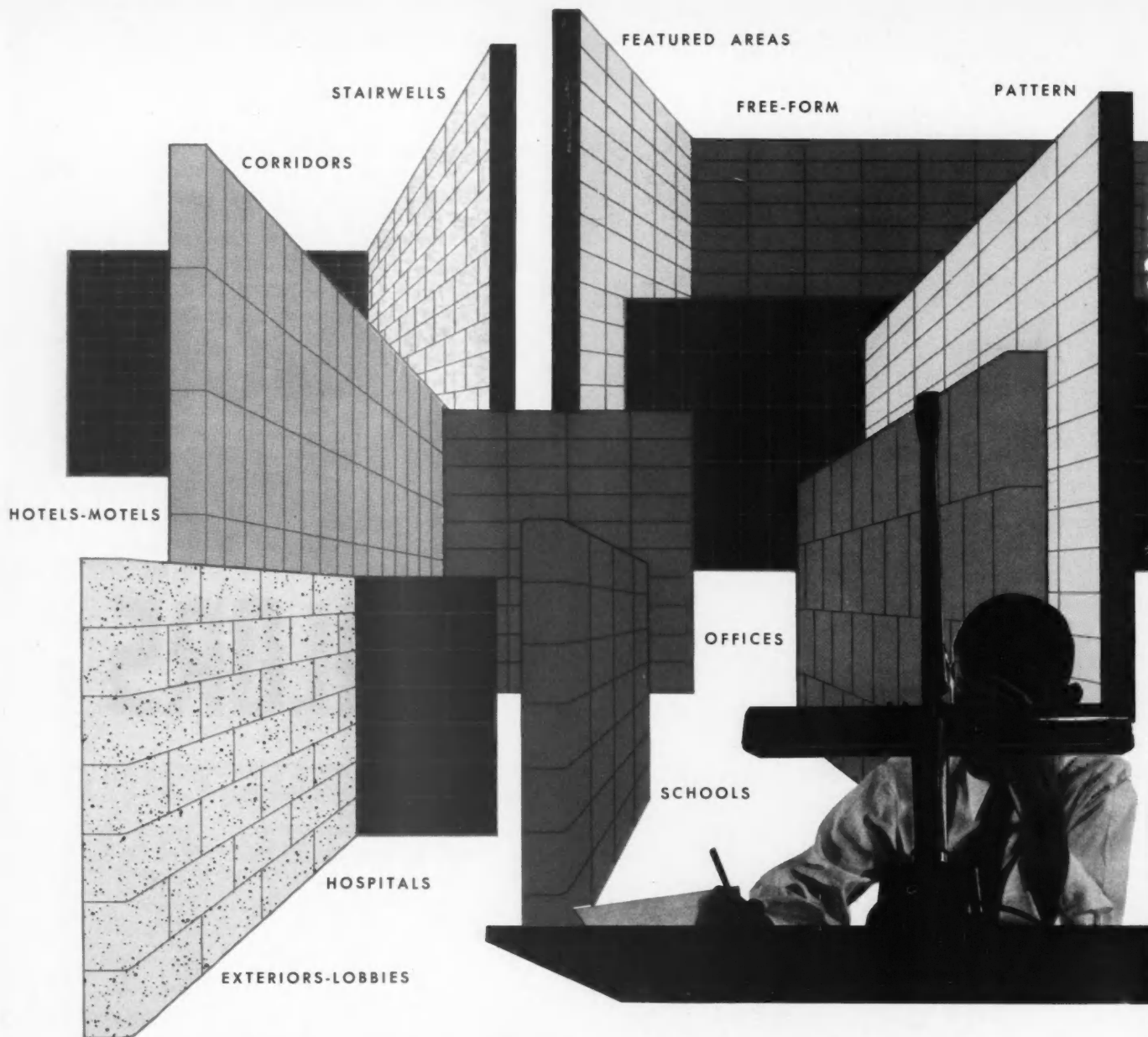
SINCE 1880

**ROBCO**

STRUCTURAL GLAZED FACING TILE

* PEARL GRAY .....	(e)	FOREST GREEN .....	(22ni)
SHADOW GRAY .....	(2dc)	SURF GREEN .....	(24ge)
GRAY SPECK .....		SEAFOAM .....	
WHITE .....	(a)	DESERT CREAM .....	(3ea)
SUNGLOW YELLOW (1 1/2 ea)		CAMEO .....	
CORAL .....	(6lc)	SPANISH BROWN .....	(4ne)
HORIZON BLUE .....	(15gc)	FALL RED .....	(6/pi)
PARISIAN BLUE .....	(13/pq)		

Letters in parenthesis indicate Color Standards Division, Container Corporation, color designations.



## ROBCO'S 15 COLORS—SINGLE PRICE—TIGHTER TOLERANCES PERMIT PERSONALIZED, ENRICHED ARCHITECTURE... IN MORE AREAS

Integrated color harmony and contrast in glazed facing tile... a true "no-maintenance" material... can now be specified for more areas, without exceeding budget limitations. Robco's Harmony Colors, now all one price, are in shapes and sizes (6T Series) to meet every detail requirement, whether in a central display area or a traditional utility area. This new color concept permits soft expression or strong accent simply by varying the hue of the tile. Robco's Architect's Handbook, illustrating inspiring color and pattern design, and Robco's Guide Specification, covering workmanship and materials for Structural Glazed Tile, are available on request on your firm's stationery.

**THE ROBINSON BRICK AND TILE CO. • 500 S. SANTA FE DRIVE • DENVER 23, COLO.**

# THE PRESIDENTS' PAGE



**CENTRAL  
ARIZONA  
CHAPTER**

**John Brenner**



**SOUTHERN  
ARIZONA  
CHAPTER**



**Edward H. Nelson**

IT CAN BE PRESUMED, I suppose, that your President is expected each month on this page, to come up with some timely and poignant message. I don't have one! Then comes disillusionment and dilemma. Should he delve deeply into a treatise on the esthetics of architecture, wherein he might reveal himself as completely out of character and over his head in platitudes?

What about a dissertation on professional ethics? Every one of us knows how we are expected to behave, so what further can come of a long-winded lecture from me?

Perhaps a few thoughts could be jotted down about promoting better attendance and working toward increasing our membership. Shucks, we already have a committee hard at work on that subject!

There certainly should be some special item toward which I could easily direct a few hundred words without straying too far from the realm of familiarity, but what? Urban Design and Housing? Office Practice? Preservation of Historic Buildings? Awards and Scholarships? Research? Collaboration with the Design Professions? Or any of the other vertical committees? Sure, there are pages and pages of material under each and every one of these headings — but — there is also a committee of this chapter already assigned and presumably working and striving feverishly to perform miracles of accomplishment in its effort to surpass the achievements of all who superseded it and even of those yet to come!

Have you got the message, or do I have to spell it out? There's work to be done by all of us, collectively, singularly and enmasse. There weren't enough committees that every corporate member could be a chairman, nor could we appoint every associate and junior associate as a committee member, but every committee needs all the volunteer help it can get from any of us, particularly from you who feel that your own special talents and interests would be useful and helpful to any one or more particular fields. How about it?

GUEST COLUMN BY DAVID S. SWANSON, AIA

ANY POLITICAL subdivision; school district, town, city, county or state can learn from the experiences of the adjacent higher or lower level of organization.

In the case of the city, a constant process of change takes place. Look around your community and note the changes in only the last ten years. Will not similar changes also occur in the next ten years which will far outmode the planning of this period?

It seems obvious therefore, that the only satisfactory plan for any political subdivision must be one which takes into account the element of change.

The element of change is typical of the city's zone of influence as it is of the city itself. As conditions within the city become increasingly unhealthy, prospective home owners choose to build or buy outside the city. New settlements develop rapidly in the environs of the city limits. Such settlements exert a negative influence upon the city, even though the city continues to be the basis of their existence.

Quite naturally the move to the country seems attractive, yet the relief secured by the move is temporary. Within a relatively short time the conditions typical of our present-day city prevail again in the new location, since the development of these new sub-divisions has proceeded as planlessly as the city itself. The same disease exists on each level of political division.

Why is it, then, that we are so concerned with the school districts and their trustees, the cities and their councils, the counties and their supervisors, and yet we virtually ignore the state and its legislators? If future planning is good for the first three then surely it is good for the last.

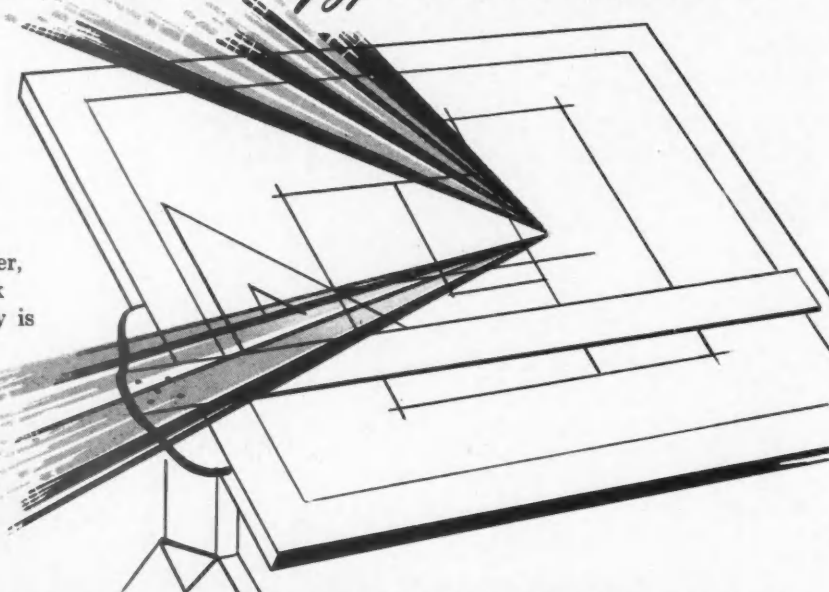
We must immediately start a master plan for our state, or the small cancers of our communities will spread and encompass the state. We must solve the problems of technics, science, space, society and its economy at the state level, as well as at the local level if we are to have a strong progressive state.



**here's why most architects**  
**specify...** *Union Gypsum Products*



All Union Gypsum Products meet with or exceed ASTM specifications. Lighter, stronger, easier to handle and work with, too. Dependability is the hallmark of

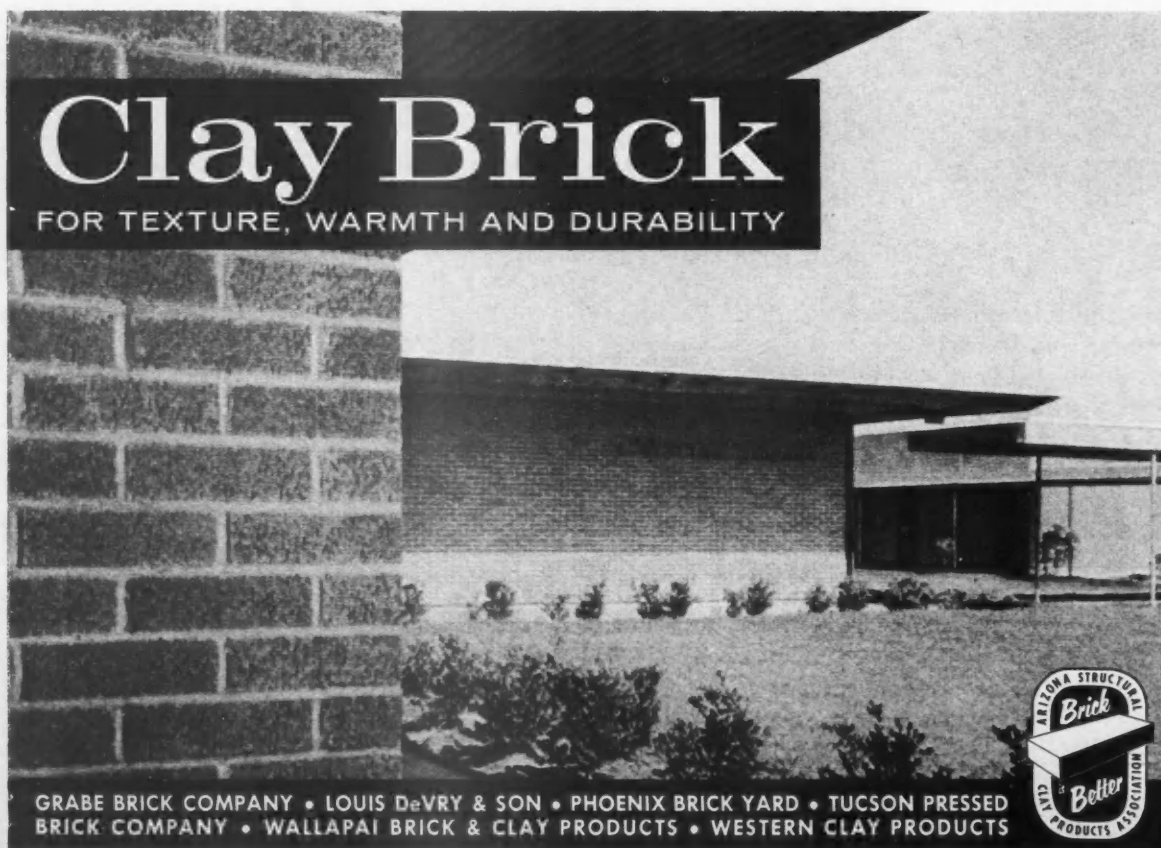


MINED AND MANUFACTURED IN ARIZONA

**UNION GYPSUM COMPANY** 1414 E. Hadley  
 Phoenix, Arizona

# Clay Brick

FOR TEXTURE, WARMTH AND DURABILITY



GRABE BRICK COMPANY • LOUIS DeVRY & SON • PHOENIX BRICK YARD • TUCSON PRESSED  
 BRICK COMPANY • WALLAPAI BRICK & CLAY PRODUCTS • WESTERN CLAY PRODUCTS



---

## The Editor's PERSPECTIVE

THIS ISSUE was conceived last July near Shiprock, N. M. We had been in New England with green, green everywhere. Houses white to give relief. Then a cross-country trip in rain-threatening gray. But as we entered the edge of our Southwest on a clear morning the infinite variety and softness and harmony of nature's colors struck an appreciative chord. We talked about it and I decided to analyze this color environment and see how it might affect our regional architecture.

Just as architecture in the past 25 years has become more functional and less ornate, so also has the use of color evolved into a greater consideration of utility. The emphasis has switched from purely esthetic appearance to purpose. As in architecture, color need not sacrifice beauty in becoming utilitarian.

Functional color had its beginning only about 35 years ago. It started in the hospital where lighting technicians had created such high levels of brightness that glare became a serious and next-to-intolerable factor. Studies by surgeons and eye specialists led to the innovations of soft shades of green and blue-green. These colors reduced glare and were found to complement the red tint of human blood and tissue. Function, rather than appearance, had become the chief consideration.

Next, school colors were studied, followed closely by business and industry and commercial structures. Scientists began studying the effects of color on the eye and entire human organism; psychologists discovered and were able to catalog the impact of color on the emotions. As a result, color engineering became a new, challenging profession which now reached the executive level in large businesses or industries.

Architects, as technical advancements in building became increasingly complex, have had to rely more and more on trained specialists in such fields as air conditioning, acoustics, new building materials and specialties and, most recently, in color.

The interior decorator may or may not be a specialist in functional and esthetic color. Many modern interiors, for example, may employ the latest beliefs in modern color and, yet, for the occupant, be visually and emotionally upsetting. They may cause the occupant to feel as if he were on a stage or in an art gallery because the scheme just doesn't fit him. The decorator may have been smart and perfectly correct according to the color chart, but he has failed to take advantage of the knowledge gathered by the psychologist.

The field of functional color is so new that it is virtually impossible for any other than a specialist

to keep up with fast-accumulating knowledge. This issue of *Arizona Architect*, therefore, attempts to aid the architect, designer and specifications writer to know what to look for; to spot trends in color usage, and to help clients with color selection.

Included are articles on the associations people make with specific colors and why, a "nature's guide to color," and a look at today's controversial bright hues. Briefly, the more important findings of researchers and psychologists in the field of color for schools, industrial plants, businesses, homes and restaurants, hotels and even hospitals are included.

There is, however, no single formula. One set of answers differs widely from another. When research leaves the realm of black and white statistics and perfectly measurable responses and enters the world of human emotions and reactions, it must necessarily allow more and more surmise to affect its result.

There is no dispute that color should be suited to human personality and habit. Conservative persons have been found to have a tendency toward tradition and sentiment in decoration and for soft, subdued hues, preferably cool. More extroverted individuals, in addition to having a more acute color sense than their opposites, are more likely to enjoy and be comfortable with modern, abstract and more radical design and a bolder array of hues and color contrasts.

Specific findings have led to the search for causes and effects which now underlie functional color principles. Large, unbroken areas of bright blue can cause nearsightedness; brilliant red under strong illumination may cause extreme restlessness; and too-large and too-bright expanse of white can cause sharp pains across the forehead, brought on by a severe constriction of the pupil of the eye.

Illumination, too, is an integral part of color. Yet it, in itself, is a complex field and, because of its wide scope, will be discussed separately in a subsequent issue of *Arizona Architect*.

Here, then, is color; not a detailed treatment intended to be complete, but rather a challenge and, because of its interplay with the emotions of people, a controversy. In these days of tension, color undoubtedly will be expected to do more than serve the function of beauty. With allowances made for human likes and preferences, color will come to be more and more engineered to make any structure a more comfortable place in which to live and work.

*Phil Litt*



## HARDWARE TIPS

By Veron Junger, A.H.C.  
READ THE DIRECTIONS

Building materials salesmen who deal with do-it-yourselfers have a favorite saying: "When all else fails, read the directions." They say this to housewives who put thinner in water paint or water in oil paint and who install locks upside down or bore the holes too big. After these ladies foul up their jobs, they go back and read the directions.

Professionals should not emulate this poor policy.

The installation of builders hardware is one field where failing to read manufacturers' instructions can be extremely troublesome. It can cause loss of time, extra service calls and customer dissatisfaction.

Good mechanics know that different brands and different models of builders hardware items call for different techniques and procedures, so they read the enclosed instructions and use the enclosed templates. Inexperienced mechanics often foul up jobs first and then look for the instructions and templates which they have probably thrown away in the belief that every lock or panic device or door closer goes on in the same way.

Smart job superintendents insist that mechanics read the instructions and use the templates supplied. It costs less to be right the first time.

**YALE**

The Safest Name in Locks

CALL  
CR 9-2341

909 E. Camelback Rd.



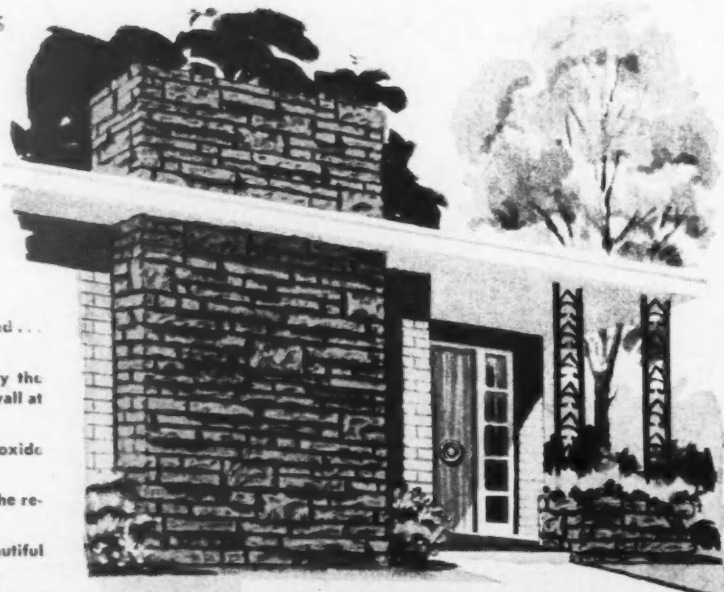
Phoenix, Arizona

modern trend demands

**DESERT  
STONE**  
*by Superlite*

because...

1. **DESERT STONE** is split faced and hand chiseled... not molded.
2. **DESERT STONE** is faced and finished in exactly the same way as natural stone and installs in the wall at approximately half the cost of natural stone.
3. **DESERT STONE** color pigment is synthetic iron oxide homogeneously mixed into the facing.
4. **DESERT STONE** is structural and makes up half the required wall.
5. **DESERT STONE** comes in a wide variety of beautiful soft colors and is absolutely fast.
6. **DESERT STONE** comes in modular heights and ties in with any masonry wall.
7. **DESERT STONE** is a completely finished stone product, ready to install in the wall. Easily cut to various lengths for beautiful patterns.



**SUPERLITE**  
BUILDERS SUPPLY CO.

4012 North Central Avenue  
Phoenix, Arizona AMherst 5-4755

## COLORS CONTROL HEAT, INSECTS

The use of color to control temperature and insects is relatively well-known and understood. Yet just how effective white and light colors are in reflecting heat often may not be fully realized by clients.

The U. S. Bureau of Mines aptly demonstrated the effect of white in a recent test on gasoline storage tanks. Over a period of nearly five months, a 12,000 gallon tank painted white and having an insulated housing had a loss due to evaporation of 112 gallons, or 1.40 per cent. Tanks covered with aluminum foil, aluminum paint and red paint lost 170, 187 and 284 gallons, respectively, or 2.12, 2.34 and 3.54 per cent.

Insofar as insects are concerned, most are blind to red radiation but are able to respond to ultra-violet. Thus red and orange lamps of low wattage will hold less attraction. Houseflies have been found to be more attracted to lightness than darkness, but mosquitoes are repelled by light colors. Dark areas will definitely harbor more mosquitoes than light areas.

### SOURCE ACKNOWLEDGEMENT

The material on color in this issue was compiled from various sources, chief among them being:

**New Horizons in Color**, by Faber Birren, Reinhold Publishing Corp.;  
**Color in Business, Science and Industry**, by Deane B. Judd, John Wiley & Sons, Inc.;

**The Art of Color and Design**, by Maitland Graves, McGraw-Hill Book Company, Inc.;

**Color Psychology and Color Therapy**, by Faber Birren, McGraw-Hill Book Company, Inc.



# The Utility Of Color In Architecture

A Compendium Of Ideas  
Gathered From Experts

There are reasons for research into color. While the subject allows wide flexibility in personal choice, the advantages in making the use of color a functional one should always be considered by the decorator, whether he be the architect, the client or a retained color expert.

Chief among considerations, and the one most often overlooked by the decorator in his desire to create esthetically pleasing combinations, is the objective: what useful purpose can the choice of colors serve? Unfortunately, as color researchers have found, all too many color decorators regard esthetics and functionality as being at opposite ends of the poles. The architect, of all professional people, should be able to recognize that this need not be true. After all, the job of reconciling beauty and design with function is one he faces daily.

The objectives of the color selection should be kept in mind and will, rather than force the designer to be at odds with esthetics, aid him in achieving both. Objectives, for example, of color conditioning in schools, hospitals, industrial plants and offices are rather clear. Insofar as color may help, it seeks to improve production, both in quantity and quality, through relief from eyestrain and fatigue and elimination or reduction of accident hazards. Color has been found effective in shortening periods of personnel training and in providing higher morale and lower rates of absenteeism and turnover. Better industrial and public relations have ensued.

Following are points gathered from various sources which can most nearly be termed "rules" or scientific principles in color use according to objective. They are far from dogmatic and are not intended to restrict imagination. Schools of color thought are as divergent as tract homes and Taliesin West. All have something to offer.

## Home Interiors

Generally the guiding principle of home decoration should be to assure comfort and relaxation, geared to the personality of the occupants.

In living rooms, comfort, conviviality and relaxation are achieved for conservative persons with soft tones, of rose or warm green, for example, coupled with a minimum of contrast. The tones used can be carried out in the carpets, drapes and walls, and other furnishings may employ soft contrast. For more modern effects to suit more extroverted clients, walls can be gray with light shades of bright colors used on end walls and furnishings. White is seldom suitable for large areas since it tends to create glare and rob from the appearance of colored materials and human complexion.

In kitchens, color variety is practical, since time seems to pass more quickly when there is much visual interest. Simple blue, yellow, red and white are effective, although colored counters and working areas are preferable in order to reduce the glare of white. Variety and brightness are suitable also for recreation areas, and bathrooms, being small in area with resultant reflection of tone, can well employ such colors as pink, coral and turquoise to complement the skin.

In the dining room, the object is to enhance the appetizing qualities of foods, for which blue is a good contrasting color. Depending on the conservatism, or lack of it, of the occupants, monotone effects or contrast are used with such colors as pale yellow, vermillion, tan, brown, peach and light green.

Bedrooms can justify brighter colors, either warm or cool, with stronger contrast because the need for uniform and soft illumination is not so great. Agreeable tones can be found among the pale greens, aqua, pink, certain yellows.

## Schools

Over 60 per cent of modern children have been found to have some visual defect and, to a lesser extent, others have posture problems directly related to efforts to see clearly. In schools, the color itself takes a secondary role to that of brightness. In virtually all cases, ceilings should be white to avoid distraction and waste of light. Colors which reflect more than 60 per cent of light are not desirable for walls and furnishings.

Assuming desirable control of brightness, in general, such colors as ivory and pale yellow are often preferred for hallways and corridors and other rooms not used for critical seeing tasks. In the classroom itself, the two most effective hues have been found to be pale blue-green and peach, which are subtle and desirable for rooms which are occupied for long periods of time. The former has been found particularly effective in secondary grades, the latter in elementary schools.

The front end of the room takes on added importance in schools. Treatment of such end walls should be in softer and deeper tones, with lower reflectance. Where "blackboards" are used, they should be surrounded with medium, rather than light, tones to reduce contrast. Studies have demonstrated that green boards, used with yellow chalk, are most effective because they employ moderate contrast and tend to hold and retain vision longer.

(Continued next page)

## UTILITY OF COLOR

### Hospitals

Great attention should be paid to psychologists and physiologists in choice of color for hospitals because they have definite, proven information on the effectiveness of color and colors on healing.

Resistance to soiling and maintenance are also of prime consideration in hospital decor, hence the predominant use of muted, grayish colors which also are restful and free from distraction. Warmer hues are generally restricted to rooms for convalescent patients, with cooler tones used in rooms for chronic patients. A soft blue-green has been found to be valuable in hospitals, particularly operating rooms and surgical departments, to create a cool and relaxing environment.

Another hospital scheme is the use of soft peach in relatively small interiors to increase room dimensions. A soft pearl gray, relieved by other colors in furnishings, is restful. Nurses' stations may be in pale yellow or peach for a slightly aggressive effect.

### Industrial Plants and Offices

For industrial purposes, soft grayish hues have been found best because they are subdued, less distracting, and conceal dust and soiling. Colors such as blue and yellow are tiring and, where subtlety exists, a more comfortable environment for long periods of time will be created. In casual places, such as rest rooms

and cafeterias, brighter hues may be employed, as in corridors.

In industrial plants or offices, where critical seeing tasks are performed, the best colors to use are soft variations of green, gray and blue. "One must remember," said nationally recognized color expert Faber Birren, "that color is more compelling than neutrality. Hence, if it is strategically used, it can bring order out of chaos, distinguish important from unimportant things, and help the worker in his mental effort to concentrate on his job. Color is made to fit in rather than to stand out. Properly used, it contributes to better visibility and to an agreeable and cheerful frame of mind."

Light and color can be carefully engineered to reduce accidents, often caused by poor visibility or strain and fatigue resulting from glare, dimness or contrast.

One of the most thorough investigations into the value of color in industry was conducted about 10 years ago by the National Industrial Conference Board. Despite the newness of color conditioning, the responses from 350 companies indicated that 64.7 per cent felt that color had improved lighting; 27.9 per cent reported production increases; 30.9 noted an improvement in the quality of work; 19.1 per cent commented favorably on reduced eyestrain and fatigue and 14.7 per cent credited color with reducing absenteeism.

---

## Experience in Hundreds of Schools Proves PITTSBURGH **COLOR DYNAMICS** Contributes to Classroom Efficiency

Hundreds of schools and colleges all over the country are now enjoying the benefits of COLOR DYNAMICS. By actual experience, educators have learned that this system of painting accelerates learning processes and improves academic grades and behavior patterns of pupils of all ages.

• By following the principles of COLOR DYNAMICS, colors are being selected easily and accurately to fit the design and lighting of all types of classrooms. Proper consideration is given to the ages of pupils who use these rooms and their activities. Gloomy, drab rooms are made to look pleasant, bright and cheerful. Rooms that face the afternoon sun are given cool relief. Small, stuffy rooms are made to seem spacious and airy.

• With COLOR DYNAMICS eye strain is lessened and concentration is stimulated. Students take pride in their improved environment and this often results in fewer housekeeping problems and less vandalism.

• Why not try COLOR DYNAMICS in your next school specs?

Pittsburgh Plate Glass Co.,  
1140 North 21st Ave., Phoenix.

Please send me a FREE copy of your booklet "Color Dynamics for Grade Schools, High Schools and Colleges."

Name .....

Street .....

City .....

State .....



# PITTSBURGH PLATE GLASS CO.



## Stores, Hotels and Restaurants

Aside from sectional preferences, the guiding factor in store and restaurant decor, and, to a degree, color in hotels, should be average taste. Americans have simple taste. They like plain, clear and direct colors. It is therefore a mistake to overdecorate a store interior. First impressions count and illumination which, combined with brightness in color, compels attention and attracts traffic, is vitally important.

For general merchandising areas, soft tones of green, gray or peach, though commonplace, are usually attractive. Fixtures can be in complementing or contrasting colors. For dramatic display, the most satisfying colors are forest green, blue and maroon. For foods, white still remains the most sensible finish for counters and cabinets. In long narrow stores, yellow frequently is used to attract the eye and, indirectly the feet, to the rear wall. In general, soft colors are preferred because they last well on large areas and create a background for merchandise.

Hotel decoration is more complicated than other commercial structures because of the nature of the clientele attracted and the varying architectural styles. Yet, average tastes, especially in the living quarters, should prevail. The lobby may employ warm colors and subtle lighting to create a friendly atmosphere. Walls should be medium in tone and not too dark.

Corridors may be painted in bright, luminous tones of pink, peach, yellow or tan.

Restaurant decoration follows a fairly consistent pattern and, according to the objectives of the restaurant, allows wide latitude on the part of the decorator.

Basically, it must be remembered that there are critical associations between foods and color and that some colors encourage lingering, others do not.

Cool colors and bright lights seem best for the coffee shop and lunch counter type of operation. They appear clean and a person eats quickly and leaves. The dining room type of restaurant uses warmer colors and dim lights to help place the customer at ease, inviting a longer stay.

Cocktail lounges, expensive hotels and restaurants invite highly individual color treatment because their customers will prize a sense of exclusiveness and will continue their patronage because the colors indicate that the establishment is not intended for the public at large.

The popular restaurant which attempts to dress itself in unusual array quite likely will find that the average public will shun it, since the average American prefers what others prefer. High individuality makes him uneasy.

In all decoration, the formula for commercial buildings becomes simple. In the words of Birren: "The right colors are those which are profitable, and the wrong colors are those which are not."

# *St. Charles* KITCHENS COLOR BRIGHT

## with IDEAS!

In Tucson —

*Rinehart Harris*  
KITCHENS

2561 East Grant Road

EA 6-1105

In Phoenix —

DESIGNER

*St. Charles*  
KITCHENS

2201 East Thomas Road

CR 7-4704

# Color Scriptures From Nature's Western Bible

Westerners who visit "back east" are invariably shocked at the soot-color of American cities. Public buildings and residences alike seem coated with color-killing grime. Everything is dingy gray or black.

Conversely, those who first visit the West are dazzled at the rainbow hues of both domestic and public structures. Buildings seem to be turned wrong-side out, with their boudoir and barroom colors exposed to public view. At first the effect may look a little "candy box" to more conservative citizens. More youthful ones relish the rainbow exteriors and gaily make plans for dressing new homes in daring pinks, turquoises, lime-greens and yellows.

Somewhere between these extremes, within the bounds of good taste, yet without the sacrifice of color variety, a balance must be struck. Architects, frequently entrusted with selection of building colors, often run into clients with excessive color-timidity or atrocious color-appetite. Satisfying them without

By Dr. Harry Wood  
Chairman, Art Department,  
Arizona State University;  
President,  
Pacific Arts Association



creating either drab spots or juke-box eyesores in a community is largely a matter of educating them to decide what they like and why.

For this purpose, the desert itself is a great textbook. Here are some of the "color scriptures" in nature's western Bible.

## 1. *Optically, sunshine bleaches.*

The great Impressionist painters knew this. Direct sunlight, falling on even the most colorful surface, actually takes the "sting" out of its brilliance. This is the essential reason for the "muted" look of the desert. Western sun will allow very bold house-colors to be used without becoming garish. Yet . . .

2. *In the desert, for every bright color patch, there are many neutrals.*

in ARIZONA... *America at its Best*


More cool air  
per penny

**COOL**  
with **GAS**

Tested, proved and accepted in Arizona.

The most completely satisfactory year 'round air conditioning.

Low cost, naturally.

 **ARIZONA Public Service**  
YOUR LOCALLY MANAGED TAXPAYING UTILITY

## Now... Explore the Uses of PRESTRESSED CONCRETE

Architects and engineers are discovering unusual construction speed and economy in pre-cast, prestressed concrete structural members. The remarkable strength developed in concrete by prestressing permits using long unsupported spans and lighter, thinner units.

Plan now to use prestressed concrete on your next job. Be sure it's made of "Arizona Portland" cement — dependable, plentiful and always conveniently near at hand.



The desert is generous with bright cactus blossoms; paloverde trees blaze like plumes of yellow-green flame. Greasewood spends its clumps of chrome yellow lavishly. Bloodred sandstone and burgundy crags of puddingstone, such as those in Sedona or in Papago Park, make the land look as colorful as a gigantic opera set.

But the close observer will soon see that every bright note is surrounded by a matrix of soft fawn browns, the milky gray-greens of sage and lichen, and the warm and gentle grays of desert driftwood and rock.

The old recipe for successful color harmony must have been formulated in the desert: to bring out the glory of bright colors, surround them with neutrals.

3. *In western atmosphere and light, "cool" colors must predominate in order to compensate for the "heat" associated with bright light.*

Orange, red, bright yellow and yellow-green generate heat psychologically, through long human association of these colors with flames.

Blues, lavenders, blue-greens and most grays, however, are experienced as the colors of shadow, sky, water and evening.

Colors such as burnt-orange, fox-red, chartreuse, and mustard-yellow cannot be used extensively on western buildings without causing the whole community to "run a color fever." But blues, blue-greens, foam greens, and even such outlandish tones as lilac

and hyacinth can be used freely without running the risk of burning out the eye.

Actually, there are good physical and optical reasons for this which architects might profitably explain to clients. Western skies are large. There is actually more expanse of blue than in wooded, hemmed-in areas of the country. This big blue sky reflects, or as the artists say, "spills," on all surfaces, particularly those which turn a surface face up. Sky-reflection accounts for a larger percentage of the total illumination than direct sunlight.

The effect of this is to "wake up" cool colors. They are more alive, more responsive than in duller climates.

Moreover, because of the clear air, viewing distances are greater in the West. Scarcely anywhere does one see buildings without their backdrop of blue mountains. Leonardo da Vinci was the first to point out that this "aerial perspective" — the tendency of intervening space to cause distant landscape to look bluer, grayer and paler than the foreground — is one of the elements in the optical vocabulary of the artist.

The architect can use this knowledge to make his building colors harmonious in western settings by emphasizing his cool colors. By thus relating them to the distant zones he expands the sense of space in his buildings and helps them take their place in the wide-open vastness of the West.

(Continued next page)

## SPECIALISTS IN ARCHITECTURAL MILL WORK

•  
Complete Installations  
Cabinets, Seating,  
Laboratory Equipment  
•

Authorized State Distributors for  
**Rowles School Equipment**



Board of Directors Room  
Installation by Thoren's

Salt River Power District  
Architect: Kemper Goodwin, AIA

**Thoren's**

BACKED BY 200 YEARS OF FAMILY EXPERIENCE IN CABINET WORK AND DESIGN

**SHOWCASE & FIXTURE COMPANY, INC.**

PHONE WO 7-4771

149 FARMERS AVE., TEMPE



# Phil Stone

COMPANY, INC.

## COLORFUL SHOWER ENCLOSURES



- PROMPT DELIVERY
- GUARANTEED  
WATERPROOF
- COMPETENT  
SPECIFICATIONS  
SERVICE
- BUILDERS CHOICE

•  
Latest Custom Designs In  
"Acrylite" Plastic Panels  
•

New Frame Finishes, Colors  
Brass-Tone, Gold-Tone,  
Silver-Tone

Dial CR 7-4734

2121 East Indian School Rd., Phoenix

## "COLOR SCRIPTURES"

4. Any bit of unspoiled nature, if closely studied, will provide the clue to successful color harmonies.

Because the desert is largely uncontaminated by meddling humans, the pages of nature's color dictionary may be consulted on every hand. Within a few miles of his office, an Arizona architect can take a client to a dozen washes where beautiful combinations of rocks of many choice hues are tumbled together like a warehouse of color samples. Cactus and succulents in profusion, exotic trees and blossoming shrubs break out new color schemes with every passing week.

The Indians who built the charming and ingenious structures at Wupatki ruins in northern Arizona some 900 years ago used the warm red-brown sandstone blocks tumbled into an old lake bed as the natural walls of their homes. Many a client, if conducted on a brief, revealing field trip to one of these desert color samplers, will be able to enrich tenfold his enjoyment of the buildings he is sponsoring.

And an architect who tunes his eyes to the desert soon finds that his color discrimination and sensitivity is immeasurably enhanced. His buildings have a sense of "belonging." They express that essential inner and outer harmony which enables him to fulfill his time-honored role as the builder of inspiring temples and comfortable homes.

## In The Public Interest

And

FOR YOUR OWN AND YOUR CLIENTS' PROTECTION

*Always recommend a contractor licensed by the —*

## *Registrar of Contractors*

State of Arizona

1818 W. Adams St.

• Phone ALpine 2-2381 •

Phoenix



# The Connotations Of Color

## Some Of The Symbolism Associated With Color

"The green freshman was feeling blue. He had refused to fight the senior, even though he was seeing red and in a white hot rage. He knew he was yellow. Even though he'd always thought the senior a white guy, he now knew that anyone who'd call another fellow's date a scarlet woman was no gentleman. Especially when the girl's a blueblood from way back!"

The above string of time-worn clichés, while never able to be included even in a two-bit novel, nevertheless illustrates the fact that people do make associations with colors. Throughout recorded history, color has left its impact on religion, literature, the arts, medicine and the thought of people. It has developed characteristics and symbolism which today influence the selection of certain colors for specific uses.

Often a given color has both pleasant and unpleasant connotations. Yellow, for example, is a sacred color in China and in European Christianity. On the other hand, it is sometimes used to signify

treachery, cowardice and deceit. These seeming inconsistencies in the use and significance of yellow and other colors are believed to be due to the fact that the name of a color has been loosely applied to many hues, tints and shades.

Knowledge of the characteristics and symbolism ascribed to "pure" colors may help the architect in advising clients or designing buildings.

### Yellow

Yellow is the most luminous of all colors, but the least popular, particularly the darker shades. Bright, clear yellow is emblematic of the sun and is cheerful, gay and lively. It was very much in fashion in the decade preceding the turn of the century, a period sometimes known as the "yellow nineties." The darker and the more neutralized yellows and greenish yellows are the most unpopular of all colors, associated with sickness and disease, indecency, cowardice, jealousy, envy, deceit and treachery. Nevertheless, these yellows, unpleasant by them-

(Continued next page)

## EXCLUSIVE DISTRIBUTORS and APPLICATORS FOR ARIZONA

### Glid-Tile

... true polyester resin finish with  
exceptional durability and beauty

for Masonry Block  
Concrete  
Wood  
Metal  
Plaster  
Wallboard



#### NOTE TO ARCHITECTS:

Specify these products under Special Coatings or Panelings. Because they require special application techniques, they should be written under special sections of specifications in order to assure proper workmanship by approved applicators.

Custom furniture and fixture refinishing.  
Inquire about original murals by our talented artists.

### FLEX WOOD®

... richly grained.  
real wood wall paneling in flexible form  
for commercial, institutional and residential interiors.

### Kalistron®

Flexwood and Kalistron are products  
of United States Plywood Corporation

... colorful vinyl wall  
covering that resists wear.



### Painting & Decorating Inc.

4710 North Central Phoenix CR 4-3529



## COLOR CONNOTATIONS

selves, may be satisfactory and even beautiful when properly related with other colors.

### Red

Of all the colors, red has the strongest attraction. It is positive, aggressive and exciting and is the most popular color, particularly with women. Red was the first color to be given a name in primitive languages. It, in general, symbolizes the more primitive passions and emotions. It is associated with rage and strife, danger, courage, virility and sex. The Roman battle flags were red and the same color is used today as an emblem of defiance and violence, as in Fidel Castro's Cuban pennant. Although bright red is stimulating and, in general, pleasing, it becomes fatiguing and generates a desire for its complement, blue-green, when used in too large quantities or too extensively.

### Purple

Stately, rich, pompous and impressive are the characteristics found most often to be ascribed to purple. The combination of blue and red combines, in association, the attributes of the two colors: red, courage and virility, and blue, spirituality and nobility. It is the traditional color of royalty, "born to the purple."

### Violet

Violet is known as cool, negative and retiring, similar to blue but more subdued and solemn, suggesting resignation. As a religious symbol, violet

denotes penitence of saints and has had said of it: "Violet," a red succumbing to blue, is the color of women no longer fruitful and of priests living in celibacy."

### Blue

Cool, serene, passive and tranquil are qualities attributed to blue which, with the church, signify sincerity, hope and serenity. Today the term "blue-blooded" denotes aristocracy and the expression, "true blue," signifies fidelity.

### Green

Green, relatively neutral in its emotional effect, is similar to blue, tending to be more passive than active. For this reason it is often considered the most restful of colors. In religion, green represents faith, immortality and contemplation. In vernacular, "green" expresses rawness, callow youth and immaturity. The olive branch is a symbol of peace and the laurel wreath, of immortality.

### White, Gray and Black

Although white, gray and black are not, strictly speaking, colors, they also can induce moods, although neither so strong nor definite as those produced by hues.

### White

White is positive and stimulating, compared to gray or black; luminous, airy, light and delicate, signifying purity, chastity, innocence and truth. Another association is the white flag, denoting surrender.

## *Just a Point of View*

Building standards are easily followed by men of integrity. Such men can live their lives and pursue their business content to do their best. They need no restrictive reins nor harness.

Rather, the standards are intended for the contractor without conscience, the man without regard for the public, its safety or health.

Members of the Pipe Trades Industry Program of Arizona — plumbing, heating and air conditioning contractors — are happy to subscribe to sensible building standards.

They recognize these regulations not as restrictions to their own operations, but as a safeguard to the general public health and safety against the unscrupulous.

In addition, such standards aid in establishing fair and equitable business practices, especially in sound competitive bidding.

## Pipe Trades Industry Program of Arizona

1616 East Maryland

Phoenix

CR 7-2634

### Middle Gray

Middle gray takes of the character of both white and black, having a richness that is lacking in the shriller white and avoiding the depressing heaviness inherent in black. It is considered the ideal background for most colors and it symbolizes sedate and sober age, with passive resignation and humility.

### Black

Subdued, depressing, solemn and profound are characteristics of black. In western civilizations, black has always signified sorrow, gloom and death. It is also indicative of evil, secrecy and terror. Although by itself black is somber, if used as a background with accents of white or color, it achieves a smart formality.

In general, then, the warm colors — yellow, orange and red, are positive and aggressive, restless or stimulating in comparison with the cool violets, blues and greens, which are negative, aloof and retiring, tranquil or serene.

Color researchers also have determined that color preference is likely to follow an almost inflexible pattern: red, (particularly with women), blue (particularly with men), and, following them, violet, green, orange and yellow. Pure colors are preferred to shades and tints when used in small areas, and, in large areas, shades and tints become preferable to pure colors. Most people prefer, in order, contrasted or complementary colors in combinations, followed by harmonic or analogous colors and, finally, monochromatic.

### What Architects want in Chalkboard

1. **COLOR AND PIGMENTATION.** The kind that won't fade, leach or rub off, with excellent light reflection and absorption qualities.
2. **DURABILITY.** A solid hardboard backing and a tough abrasion resistant surface.
3. **EASY MAINTENANCE.** Clean erasing; no ghosting; washable.

GENUINE  
*Scribo*  
**fills the bill perfectly**

DISTRIBUTED & INSTALLED

by

**Phoenix Roofing & Supply Co.**

1655 W. Jackson

AL 3-2161

# Climate Built

**FOR  
THE  
ARID  
SOUTH-  
WEST**

No shrinkage,  
no moisture to  
lose before  
stabilizing.  
Every Glen-Mar door  
is built with the  
natural moisture  
content of this  
area (6%).

**Glen-Mar**  
**DOORS OF QUALITY**

*Compare these  
advantages*

**T**HE LOCATION of the Glen-Mar plant in dry Phoenix, achieves "Balanced Moisture Control" through maintenance of low moisture levels in all component parts, from raw material to finished door. For convincing proof of its superiority, just open and close a Glen-Mar door. Your questions on problems in design, planning or installation are invited. Just phone AL 4-7203.

- Quality-Built
- Balanced Moisture Control
- Beautiful wood finishes
- Complete stocks for quick delivery

**Glen-Mar Door Manufacturing Co.**  
1310 North 21st Ave., Phoenix, Ariz.

# Surface And Intrinsic Color — A Place For Both

By GORDON HECK  
Associate Professor of Architecture  
University of Arizona

Color in our environment must be conceived of as more than retinal stimulus, more than ornamentation. It must also be thought of as a vehicle for the expression of values and needs.

Color in our architectural environment — the shapes and forms which define our spaces — is basically of these two kinds: surface or applied color; intrinsic or inherent color. Surface color is the universal hue which can be applied to a material regardless of its place, while intrinsic color is one which is inherent in the material itself. We are in an age in which surface color is dominant. Such is the result of the industrialization of the component parts of buildings and the fact that we grow to be less dependent upon fossil, organic and natural material. Our color environment lacks a sense of "place."

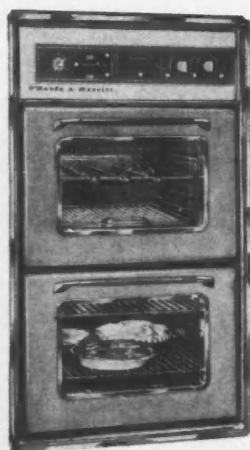
Arizona has a remarkable color environment, from the forests of the higher altitudes to the deserts of its lower altitudes. It is sad to note that the man-made environment takes no heed of the possible color stimulus inherent with a "place." Instead, villages, towns and cities grow in a remarkably homogeneous fashion. The architectural use of color seems to fol-

low the pattern of billboard design, whose colors never vary as they advertise their wares from mountain to desert.

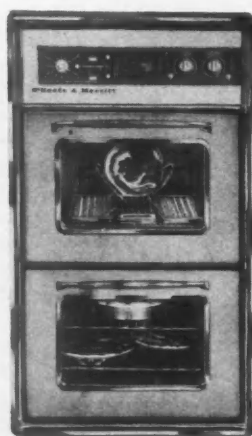
I suggest that color is being used as a substitute for ornament. The architect of today may be attempting to re-assert his function as an artist, and in his desire for ornament is using color — primarily surface color. If such is the concept being employed, the architect is subject to fad and fashion. Too often the color scheme becomes an abstraction to be worked out as an exercise in the confines of the office.

There is a place for both surface and intrinsic color as an expression of values in our environment. Surface color may be best suited to functions or needs whose values are not deeply rooted in our culture, but are instead more transient. But an excessive interest in surface color will make our color environment a totally transient one, dedicated to quick and rapid change, subject to trends, lacking a sense of time. Whereas the expression of those functions and needs whose values are deeply rooted

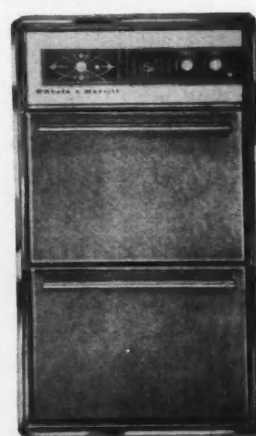
## O'KEEFE & MERRITT— NOW IN GAS OR ELECTRIC!



**MODEL 530** — Roastmeter, triple rotisserie, super speed broiler and 2 giant capacity ovens. Stunning soft-lite control panel at convenient eye level. Truly automatic cooking!



**MODEL 520** — Distinctive birch wood handles. Non-fog glass windows, removable silicone oven seals, one piece oven liner, all porcelain finish.



**MODEL 510** — Two Family Feast ovens with even flo heat. Glass control panel, chrome bar handles, electric clock, 4 hour signal timer, and 3000 W Super Speed Broiler!

**AMERICA'S FINEST FAMILY OF QUALITY APPLIANCES PRESENTS INTER-CHANGEABLE GAS OR ELECTRIC BUILT-INS. Now America's finest surface units drop into the same cutout.**

*Names of  
distinction...*

**EMIL A. SALMI**

Vent-A-Hood of Arizona  
6415 E. Thomas Rd. — Scottsdale — WH 5-9508

*...for homes  
of quality*

and require a "sense of place" might better employ intrinsic color. And we need a color environment which will also, by its graceful aging and the glow of patina, remind us that our roots are more than skin deep.

The total environment can be expressive of both kinds of needs. All we must do is become aware of these distinctions and use color appropriately. In the rush to produce architecture whose colors are transient and universal, we must allow for architecture whose color reminds us that architecture exists not only in space, but also in time. To paraphrase John Piper — we need some color in our environment which will age with the spirit of genteel decay.

— AIA —

Aram Mardian sent in this item from California Lumber Merchant.

An eminent architect was a witness in court and was being cross-examined. "You are a builder?" asked the lawyer. "No, I am an architect," said the witness. "Is there much difference?" asked the lawyer. The witness said, "Yes, an architect conceives the design, prepares the plans; in short, supplies the mind. The builder is the machine that puts it together."

The lawyer said, "Very ingenious distinction. Could you tell me who was the architect of the Tower of Babel?" Said the architect: "There was none; hence the confusion."

## New Trends

## New Designs

### Featherlite Block

### Is The Answer

## Concrete Products Co.

Home of Featherlite Blocks

4445 N. 1st Ave.

Tucson, Arizona — MA 2-8857

### ARIZONA'S ONLY BUILDER HARDWARE CO.

## NELSON - HOLLAND BUILDERS HARDWARE

We specialize in hardware for any design of commercial and custom residential building and represent these specialists in custom hardware lines:

### AUTHORIZED DEALERS for SCHLAGE LOCKS

... America's Most Distinguished Lock Brand

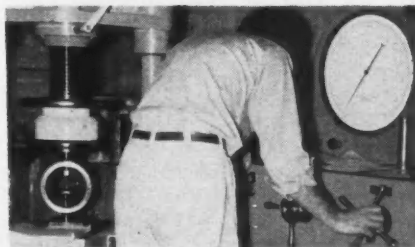
For catalogues and service call on

Vic Nelson, AHC — Cliff Holland, AHC  
Joe Woolford, AHC



Members of the American Society of Architectural Hardware  
Consultants

Phone AM 6-8411 • 1205-1207 E. Camelback  
Phoenix, Arizona



**A** balanced design between mortar strength and masonry strength is required if proper utilization of the mortar is to be made. Mortar strength should be comparable to block strength.

**T**he net balance of strength can be obtained by increasing the mortar strength requirement over that of the block. Block strength is given over the gross area, while the mortar is supporting only the net area of the block.

**L**aboratory mortar mix designs will enable the contractor to obtain the required strength and still have a usable mortar. Your specifications should require a mortar mix design, so that your balanced design may be followed.

Next month: Testing Masonry Mortar

### ARIZONA TESTING LABORATORIES

Member, American Council of Independent Laboratories

PHOENIX • TUCSON • FLAGSTAFF



## CONSTRUCTION BOOM FORECAST

Construction in 1959 will set new records, both in contracts awarded and in work put in place, according to the annual outlook statement of F. W. Dodge Corporation.

Contracts in 1959 for all types of construction will total \$35.6 billion, a 3 per cent increase over 1958's estimated \$34.7 billion.

The principal upward push in '59 construction contracts, according to the report, is expected to be in private projects, in contrast to 1958, when government-owned construction sparked the recovery from the recession.

The largest percentage increase, 14 per cent, is expected to come in contracts for new factory buildings (as measured in floor area.) The report notes, however, that "this would still represent a recovery to a modest total; if better business should cause managements to revise upward their plans and appropriations for plant and equipment above the levels they presently indicate, this figure could go substantially higher."

Contracts for nonresidential buildings are estimated at \$11.6 billion in 1959, up 5 per cent from 1958. In terms of physical volume, floor area is expected to increase by 4 per cent, with the larger individual

categories as follows: manufacturing, up 14 per cent; hospitals, up 5 per cent; religious buildings, up 4 per cent; commercial buildings, up 3 per cent; schools, up 2 per cent; social and recreational buildings, down 5 per cent; public buildings, down 9 per cent.

Noting that the estimate of a 3 per cent increase in total contracts in 1959 may seem modest in view of the prospect of a much better business climate, the report says "it must be remembered that we are talking in terms of contracts, and that a sharp rise in contracts already occurred in 1958. In considerable degree, the 1958 increases represent specific government efforts to stimulate the economy by stimulating construction. . . . There has been some 'borrowing from the future.'

"If our expectations are realized," the report concludes, "construction contracts in 1959 will again set a new record in dollar volume, and the year will mark the fifteenth consecutive increase and the twelfth consecutive record year."

— AIA —

I have seen victories that paid off in dollars and cents won by applying the sciences of mathematics, physics and psychology to (color) problems. The key to color problems . . . is to be found in visual common sense.

— Deane B. Judd

**Give your design added beauty and lasting protection**

**with Pioneer**

**paints and varnishes**

**specify the quality paints that reflect to your credit!**

Pioneer offers a complete line of:

- residential
- architectural
- industrial
- government specification

paints and varnishes

**PIONEER PAINTS ARE SPECIALIZED PRODUCTS**

We are not only a "paint factory" . . . but a highly skilled paint formulating group — consistently maintaining top quality and highest standards in our paint and varnish products. Our proven reputation is your assurance that you are specifying the best. Paint catalog and color chip display gladly furnished upon request.



**Pioneer**

PAINT AND VARNISH CO.  
P. O. Box 3098 • Tucson, Arizona

**MADE FOR THE SOUTHWEST**

Scientifically formulated and manufactured in Tucson for nearly 25 years . . .







## Looking At The Specs

(First of a regular series on specification problems and suggestions for improvement of these basic documents, prepared by members of Construction Specifications Institute.)

By LEE RUGER, Associate Member  
Central Arizona Chapter  
Construction Specifications Institute

As cold and heat have much to do with the gradual disintegration of all types of paint finishes, proper preparation of the surface to be painted is most important.

The moisture retained in poured concrete, brick, stucco and roofing tiles following rains and heavy dew is not the only moisture these materials absorb. Heat and cold have the same effect on certain surfaces and consideration must be given this condition if and when it exists. All of these conditions exist in most constructions and cause efflorescence, or the bringing of soluble salts to or near the surface. The salts show a white stain or they may crystalize near the surface.

The proper treatment of the surface can reduce and possibly eliminate this condition altogether. Even the finest quality paints will fail prematurely unless the surface has been carefully inspected and properly prepared.

Through chemistry, improved materials for prime, sealing and filling are being made available for the different types of surface preparations. On new masonry construction where cinder or aggregate block is used, a silica sand and Portland cement material with vinyl binder is recommended. This material is an excellent water proofing preparation and fills voids and porous surfaces which can be painted with any type of paint finish. It is also recommended for poured concrete after surface is cleaned of oils and waxes usually used on forms and in curing compounds. Application of this material is with stiff brush.

On previously painted surfaces, a penetrating type conditioner is recommended. If old surface coating is sound, shows no peeling or blistering and is not chalking excessively, the penetrating conditioner will work out fine. However, if surface is exceedingly bad, sand blasting is recommended. In either case should surface show the presence of efflorescence, remove with a 5% solution muriatic acid before applying either the fill coat or the penetrating conditioner. Mildew should also be removed if present. This can be done by scrubbing with a household bleach. Surface must be rinsed with clear water. Sand-blasting is extremely effective and removes all types of foreign matter.

Important points to bear in mind on surface preparation are moisture, freezing, voids, cracks, efflorescence, spalling, and the removal of any foreign matter such as waxes and oils.

## STRONG!



*Superior*

**PRESTRESSED CONCRETE**

Long spans with high load capacity are possible. Fire, blast and storm resistant.



**Superior Sand & Gravel**

3640 S. 19th Ave. — AL 8-7741

## For The Best In BUILDERS HARDWARE See O'MALLEY'S

And for the Best in

**CUSTOMER  
SATISFACTION**

Specify

**SARGENT**

Standard Exit Device



**WILLIAM E. WELLING, AHC  
GEORGE S. MARKHAM, AHC**



**O'MALLEY'S**  
*Building Materials*

**PHOENIX  
4TH AVE. AND MADISON  
TUCSON  
247 NORTH 4TH AVE.**

**Complete Architectural Service**

## IN THE BOOK WORLD

**SCHOOLHOUSE**, edited by Walter McQuade, produced by the Joint School Research Project. Simon and Schuster, 271 pp. \$10.00. Reviewed by Charles Hickman, AIA.

*Schoolhouse* covers the subject thoroughly, and while the book should be read by every architect engaged in the design and construction of schools, the book was obviously written to the over-burdened taxpayer, school boards, and school administration. In the process of explaining the complicated process of building schools, the editor has gone into detail to explain the role the architect plays.

Walter McQuade, an architect himself, has succeeded in piecing together a very complex subject in a manner so the average layman can understand it. He did not let himself get "bogged-down" with technical language in explaining such technical subjects as bonds and the bond market, building structure, acoustics, lighting, etc. McQuade moves right along and at times he becomes a bit humorous.

If *Schoolhouse* gets the circulation it deserves, our schools are bound to improve.

**COLOR PLANNING FOR BUSINESS AND INDUSTRY** by Howard Ketchum. This illustrated book points the way to easier and more profitable color planning, shows the author's color techniques and innovations that have helped leading firms throughout the world keep ahead of competition, and helps the reader to discover how to select colors appropriate to the product's use. Harper & Brothers. \$5.95.

**COLOR AND LIGHT AT WORK** by Robert F. Wilson. Art director of the British Color Council, Mr. Wilson is recognized in many countries as an authority on color and lighting. He deals with the many principles of lighting and the application of color to use in factories, offices, public buildings, schools and hospitals, particularly as they relate to improved standards of working conditions, increased production, reduced absenteeism, safety and better relations between all engaged in industry. 176 pp. Illus. \$4.00.

**NEW HORIZONS IN COLOR** by Faber Birren. A complete handbook on the function of color in visibility, safety, and its effect on human efficiency. Describes the use of color inside and outside, how light affects color, and how to use color functionally as well as esthetically, 224 pp. Illus. Reinhold. \$10.00.

**BASIC COLOR** by Egbert Jacobson. An interpretation of the Ostwald theory, this book on color and in color describes basic principles and their practical application. With clear text and numerous illustrations, the ingenious arrangement of the book permits instant comparison of the color charts for ready selection of harmonies and combinations. 224 pp. Illus. Theobald. \$14.75.

**MODERN FRENCH INTERIORS** by George Eudes. One of the most important influences in modern interior decoration is fully covered in this unique pictorial survey of the best examples from France today. Page after page of handsome color and black and white pictures suggest delightful new ideas for solving unusual decorating problems and a fresh approach to the uses of color. Illus. Viking, \$15.00.

**FORMATION OF JAPANESE FARM-HOUSES** by Takeshi Nishikawa. With text in Japanese and English, the book contains photographs of many handsome examples of a simple kind of Japanese architecture, the farmhouse. 156 pp. Illus. Tuttle. \$7.75.

**THE MUSLIM ARCHITECTURE OF EGYPT, Vol. II** by K. A. C. Creswell. This first comprehensive work on Ayyubid and early Mamluk architecture in Egypt is written by the Professor of Muslim Art and Archaeology, Egyptian University, Cairo. It deals fully with the military works of Salah ad-Din, the Ayyubid monuments and many early Mamluk monuments. 320 pp. 110 text figs. 120 collotype plates. Oxford University Press (June). \$50.40.

**THE NEW ARCHITECTURE IN GREAT BRITAIN** by Edward Mills. Describes and depicts 15 buildings from the viewpoint of a British architect on the planning, technical, economic and esthetic aspect involved. 210 pp. Illus. Reinhold. \$4.95.

**SWEDEN BUILDS** by G. E. Kidder Smith. Hailed as a masterpiece, this new revised edition brings the story of Swedish architecture up to date with 130 new photographs. Every aspect of contemporary Swedish architecture is examined. Includes two articles by Sven Markilius, Sweden's best known planner and architect. 280 pp. Illus. Reinhold. \$5.95.

**MODERN ARCHITECTURE IN BRAZIL** by Henrique E. Mindlin. A complete panorama of Brazilian architecture from the earliest time to the present. Contemporary architecture is shown in over one hundred examples. A new feature — all plans are specially redrawn and printed to scale. 856 pages. Illus. Reinhold. \$6.95.

**ARCHITECTURE U.S.A.** by Ian McCallum. A survey of living American architects. Describes our architecture in breadth and depth studying, and presents the social and historical development that carried the new ideas to fruition. 240 pp. Illus. Reinhold. \$13.50.

**ARCHITECTURE OF TODAY** by Udo Kultermann. Illustrated with 180 full page photographs of buildings in the United States, Mexico, Venezuela, Brazil, Scandinavia, England, Holland, Belgium, Germany, Switzerland, Austria, Italy, France, Spain, Africa, India and Japan. The book is prefaced by a short synopsis of the history of this new architecture, followed by an explanation of the deviations peculiar to the various countries represented. The author's primary aim is to show and emphasize the overall unity and convincing quality of the international architecture of our time. Universe. \$9.50.

---

**Magazine Subscriptions** Central Arizona Chapter, A.I.A.

**Books**

**ARCHITECTS BOOK & MAGAZINE SERVICE • P. O. Box 904, Phoenix • AL 2-4318**

*On all book orders please add 2½% sales tax.*









# Here's COLOR

## FOR ARCHITECTURAL DESIGN



**PORCELAIN ENAMEL** curtain walls and veneer panels provide a full range of beautiful, acid resistant porcelain colors on steel, aluminum or aluminized steel. Gain space, cut costs, attain greater design latitude, reduce maintenance costs.

**Glasal** compressed asbestos cement sheets with special enamel surface. Hard as quartz, in more than 25 colorings — an ideal decorative lining for table tops, counters, sink surrounds, bathroom panels, etc.



**Granite** — another Belgium import. Sheets have a smooth polished surface with colored grains crushed into the top layer, the asbestos fibres giving exceptional strength.

Proof against water and heat, they are available in sheets, may be ruler for tile effect, or cut in strips for use as louver blades.



**PREMIER LAMINATED PANELS** in unlimited range of color. Insulated sandwich panels available in various combinations of material such as polyester fiberglass, metal, and cement asbestos. Curtain walls, interior partitions, facings, roof decks.

# HASKELL-THOMAS, INC.

Distributors of quality lines

3740 E. Grant Rd.

EA 7-4690

3808 N. Central

CR 7-5488

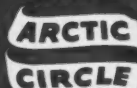
**TUCSON**

**PHOENIX**

# FOR **Low-cost cooling**

**SPECIFY**

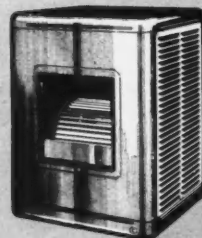
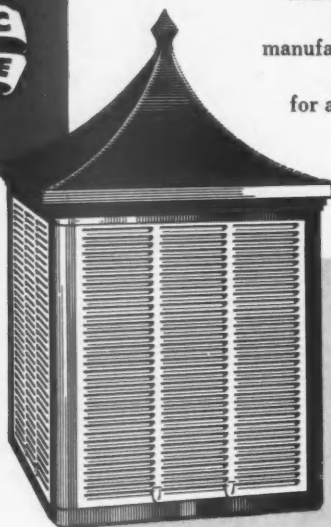
## **ARCTIC CIRCLE** air coolers



Many advanced features — *the result of 20 years of specialized experience* in evaporative air cooler manufacture — have made Arctic Circle Air Coolers first choice of Arizona's leading architects for all types of buildings where efficient and dependable cooling at low-cost is required. Catalog with specifications supplied on request.

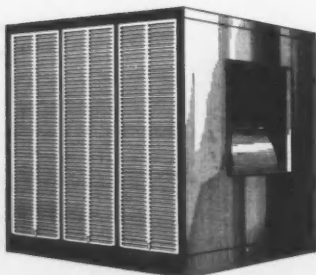
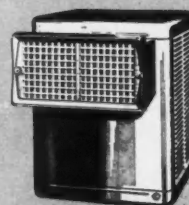
### **ADVANCED FEATURES INCLUDE:**

Duro-coated steel cabinets  
Flow equalizers†  
Self-adjusting water dispersion  
Aquatrol® attachment for pump  
Improved Microglas† filter  
2-speed Controlled Cooling

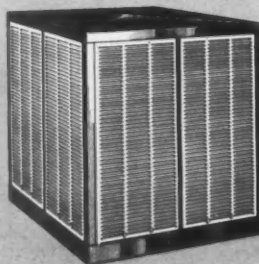


### **RESIDENTIAL** roof, wall or window-installed models

Horizontal discharge and down discharge models — with all-welded cabinets — available in capacities from 1800 to 6500 CFM inclusive. Window coolers available in capacities from 2000 to 5000 CFM.



*Arctic Circle Coolers are made by the world's largest exclusive manufacturer of evaporative air cooling equipment.*



### **COMMERCIAL-INDUSTRIAL** models for large-area cooling

Horizontal and down-discharge types. Heavy-duty construction. Can be installed singly or in combination. Available in capacities from 7500 to 15,000 CFM inclusive.

**INTERNATIONAL METAL PRODUCTS COMPANY**

P. O. Box 1712 • 500 South Fifteenth Street • Phoenix, Arizona

†Patented \*Patent Pending



